

REMARKS

Claims 2-5, 7, 8, 11, 12, 19 and 21-28 are now pending in this application. Claims 3 and 4 are withdrawn. Claims 2, 5, 7, 8, 11, 12, 19 and 21-28 are rejected. Claims 1, 6, 9-10, 13-18 and 20 are previously cancelled. Claims 5 and 21 are amended herein to clarify the invention.

The applicant and applicant's attorney appreciate the Examiner's granting of the telephone interview conducted on December 22, 2009, and extend their thanks to the Examiner and her supervisor for their time and consideration.

While formal agreement was not reached, it was agreed upon, in principle, between applicant's counsel and the Examiner, that the art rejections of record would be overcome if the claims were to be suitably amended to clarify that:

a) the inner peripheral surface of the intermediate has a substantially constant dimension over at least the length portion of the opening extending between a first position coinciding with the terminal end surface of the first core and a position coinciding with the terminal end of the second core when a movable one of the two cores makes initial contact with the lens preform prior to application of compressive forces by further advancement of the movable core, and

b) a depth of the opening of the intermediate restrictor is less than a sum of the length of an insertable end part of the first molding core and a thickness of the glass element after compression, such that a lateral compression force directed radially inward is exerted on material of the lens preform by a inwardly facing

surface of the intermediate restrictor when compression is further continued beyond an initial compression.

While the Examiner indicated that she was inclined to agree that the above amendments would overcome the art rejections, particularly based upon Takano and Shimizu, she further stated that a final decision would be conditioned on confirmation by the Examiner of the fact that Takano et al. indeed teaches that continued free travel of the formation molds 3, 4 for further compression is stopped by the shouldering of a widened portion thereof (3, 11, 20) against the trunk molds, thereby preventing continued compression beyond the initial compression, as shown, for example, in Fig. 2 of the Takano reference.

The amendments to the claims made herein reflect the understanding had during the above referred interview, and therefore, applicants respectfully submit that the claims in their newly revised form overcome all art rejections of record.

Applicant herein traverses and respectfully requests reconsideration of the rejection of the claims cited in the above-referenced Office Action.

Claims 2, 5, 7 12 and 19 are rejected as obvious over Shimizu et al. (JP 60-171234) in view of Budinski et al. (US 6,305,194) and Takano et al (JP 1226746) under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

As discussed above relative to the content of the interview with the Examiner and her Supervisor, independent claim 5 is amended to specify that no stepped internal shoulder as shown in Shimizu is present in accordance with the present invention. This is recited by claim language which requires “said radially inner dimension of said opening being substantially constant over at least a length portion thereof extending between a first position along a length of said opening which is axially coincident with said terminal end of said first core when said terminal end is in the initial contact with the lens preform and a second position along the length of said opening at which said intermediate restrictor contacts said terminal end of said second core.” Additionally, claim 5 is further amended to distinguish over the disclosure of Takano, by reciting that “a distance between a first side of said intermediate restrictor which faces said first core and said terminal end of said second core being less than a sum of a thickness of the lens preform when fully compressed and said length of said tip part.” Because of these combined newly claimed features, “lateral compression force directed radially inward is exerted on the material of the lens preform by the inwardly facing boundary of the intermediate restrictor.” By virtue of this, the results obtained when molding a multi-lens array are quite dissimilar from those achieved by the Shimizu et al. reference, in which a stepped inner region allows flow of the compressed lens material to flow into the annular upper space created by the step, and is effectively prevented from flowing radially inward by laterally directed forces, as being blocked from reaching the lens portion

by the top core which extends down below the step in the opening. Because material is allowed to escape peripherally into this annular space, thereby relieving pressure in the periphery, applicant respectfully submits that the contrasting counter-pressure encountered in practice of the claimed invention of claim 5 in the peripheral region of the multi-lens matrix, and which is thought to be attributed, at least in part, with the resultant superior characteristics observed, is not present in Shimizu et al.. Moreover, applicant notes that since Shimizu et al. is directed to molding of a single lens, the problem solved by the inventive approach, i.e., improved lens quality at a periphery of a multi-lens matrix, is of no concern in addressing the challenges faced by the present inventor in solving the problems heretofore encountered in connection with a multi-lens array, for example, by practice of the method disclosed in Budinski et al., i.e., lack of consistent uniformity of quality of more than one lens over an entire array.

Takano et al., directed to a single lens molding method, fails to adequately supplement the missing motivation and reasonably expected results obtained by the claimed invention, directed to molding of a multi-lens array. Moreover, as noted above, claim 5 is amended to distinguish over Takano, which clearly teaches that the top core is intentionally prevented from effecting further compression of the preform beyond a fixed amount by contact engagement of the widened portion (mold 3) with the top surface of trunk mold 5, which acts as a stop against further advancement.

Thus, it is respectfully submitted that the rejected claims are not obvious in view of the cited references for the reasons stated above. Reconsideration of the rejections of claims 2, 5, 7 12 and 19 and their allowance are respectfully requested.

Claim 8 is rejected as obvious over Shimizu et al. (JP 60-171234) in view of Budinski et al. (US 6,305,194) and Takano et al (JP 1226746), and further in view of Takagi et al. (US 5,817,616) under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection.

Takagi et al. is also directed to a single lens molding method, and therefore the features and results of parent claim 5 are not made obvious by supplementation with the reference disclosure. Takagi et al. could not provide reasonable likelihood of success in achieving the results obtained in association with molding a lens array containing multiple optical elements.

Thus, it is respectfully submitted that the rejected claim is not obvious in view of the cited references for the reasons stated above. Reconsideration of the rejection of the claim 8 and its allowance are respectfully requested.

Claim 11 is rejected as obvious over Shimizu et al. (JP 60-171234) in view of Budinski et al. (US 6,305,194) and Takano et al (JP 1226746), and further in view of Ikeuchi et al. (JP 03-146427) under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection.

The Ikeuchi et al. reference, cited for its alleged disclosure as relating merely to relative sizing of mold cores to an intermediate restrictor, and which is directed

only to single lens production, can provide nothing meaningful in solving obstacles encountered in forming of multi-lens arrays.

Thus, it is respectfully submitted that the rejected claim is not obvious in view of the cited references for the reasons stated above. Reconsideration of the rejection of the claim 11 and its allowance are respectfully requested.

Claims 21, 22, 25 and 28 are rejected as obvious over Takano et al (JP 1226746) in view of Marechal et al. (US 4,481,023) under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection.

Independent clam 21, as amended, reflects the understandings had during the interview to incorporate, like claim 5, discussed above, that “a distance between a first side of said intermediate restrictor which faces said first core and said terminal end of said second core being less that a sum of a thickness of the lens preform when fully compressed and said length of said at least the portion of said a one of said first core or said second core.” This feature distinguishes over Takano, which teaches that the top core is intentionally prevented from effecting further compression of the preform beyond a fixed amount by contact engagement of the widened portion (mold 3) with the top surface of trunk mold 5, which acts as a stop against further advancement.

Thus the references fail to disclose every claims element, as required for establishing a *prima facie* case of obviousness. Reconsideration of the rejection of claim 21 and its allowance are respectfully requested.

Claim 23 is rejected as obvious over Takano et al (JP 1226746) in view of Marechal et al. (US 4,481,023) and Budinski, and further in view of Shimizu et al. (JP 60-171234) under 35 U.S.C. §103(a). Claim 24 is rejected as obvious over Takano et al (JP 1226746) in view of Marechal et al. (US 4,481,023) and Budinski, and further in view of Ariyoshi et al. (US 2003/0072080) under 35 U.S.C. §103(a). Claim 27 is rejected as obvious over Takano et al (JP 1226746) in view of Marechal et al. (US 4,481,023) and Budinski, and further in view of Yoneda et al. (US 2005/0172671) under 35 U.S.C. §103(a). The applicant herein respectfully traverses these rejections.

It is respectfully submitted that none of the additionally cited references, including Shimizu et al., Ariyoshi et al., Budinski et al. and Yoneda et al. provide any suggestion as to how a uniformly acceptable quality of individual lenses making up a multi-lens array can be maintained when molding same, such as in accordance with the claimed approach. Therefore, these additional references fail to provide what is missing in the references applied in the rejection of parent claim 21. Hence, a *prima facie* case of obvious cannot be established in any of these rejections.

Thus, it is respectfully submitted that the rejected claim is not obvious in view of the cited references for the reasons stated above. Reconsideration of the rejection of the claim 11 and its allowance are respectfully requested.

Applicant respectfully requests a two (2) month extension of time for responding to the Office Action. Please charge the fee of \$490 for the extension of time to Deposit Account No. 10-1250.

The USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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